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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,737	01/24/2006	Shigeru Ito	018842.1482	1982

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EXAMINER

KNIGHT, DEREK DOUGLAS

ART UNIT	PAPER NUMBER
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3681

NOTIFICATION DATE	DELIVERY MODE
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04/02/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/565,737	Applicant(s) ITO ET AL.	
	Examiner DEREK D. KNIGHT	Art Unit 3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 6 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/24/2006, 1/26/2007, 2/15/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by **HASEGAWA (US 5,667,050)**.

HASEGAWA discloses an electromagnetic clutch capable of connecting and disconnecting a driving power source and a rotary shaft, comprising: a rotor (6) arranged around the rotary shaft coaxially therewith and adapted to be rotated by the driving power source; an electromagnetic force generator including an electromagnetic coil (4) arranged inside the rotor, the electromagnetic force generator producing an electromagnetic force when the electromagnetic coil is energized; an armature (14) arranged close to the rotor and capable of being attracted to the rotor by the electromagnetic force to produce a transmission force transmitted from the rotor to the rotary shaft; and a coupler coupling the armature and the rotary shaft to each other, the coupler including a connecting member (19a) coupled to the rotary shaft, and leaf springs (21) coupling the connecting member and the armature to each other and urging the armature in such a direction as to separate the armature from the rotor, wherein the leaf springs each assume an orientation such that a boost force assisting

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an attractive force acting on the armature is produced based on the transmission force when the armature is attracted to the rotor.

Each of the leaf springs (21) has inner (@ 22) and outer (@ 24) ends as viewed in a radial direction of the armature (see Fig. 3 of HASEGAWA), the inner end being located more forward than the outer end, as viewed in a rotating direction of the armature, and separated farther from the armature than the outer end.

Each of the leaf springs has an inclined portion (shown in Fig. 1) inclined with respect to the armature, the inclined portion being inclined at an angle falling within a range in which the armature is separable from the rotor when the electromagnetic coil is de-energized during rotation of the armature together with the rotor.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5, 7-11 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over **HASEGAWA (US 5,667,050)** as applied to claims 1-3 above, and further in view of **DAU et al. (US 6,578,687)**.

Regarding claim 4: HASEGAWA, as discussed in the rejection above, discloses the connecting member (19a) having mounting portions to which the inner ends of the respective leaf springs are attached.

HASEGAWA does not disclose each of the mounting portions being inclined at an angle corresponding to the angle of inclination of the leaf springs.

DAU teaches a clutch having leaf springs (16a) mounted to the plate (14a) via the mounting portions (100a and 102a), and the mounting portions being inclined at an angle corresponding to the angle of inclination of the leaf springs (see Fig. 6 of DAU).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electromagnetic clutch of HASEGAWA such that the mounting portions of the connecting members would be inclined at an angle corresponding to the angle of inclination of the leaf springs as taught by DAU so that the leaf spring element, starting from its first attachment area, has essentially no curvature in the load-free state (DAU, col. 6, ln. 18-22).

Regarding claim 5: HASEGAWA, as discussed in the rejection above, discloses the inner ends of the leaf springs being coupled to their respective mounting portions by caulking (HASEGAWA, col. 6, ln. 11-12).

Regarding claim 7: HASEGAWA, as discussed in the rejection above, discloses the connecting member (19a) having mounting holes.

HASEGAWA does not disclose the inner ends of the respective leaf springs are inserted into the mounting holes.

DAU teaches inserting the ends of the leaf spring into mounting holes (104a) (DAU, col. 6, ln. 7-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mounting of the leaf springs to the connection

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member by having the springs inserted into the mounting holes in view of DAU so that the leaf spring element, starting from its first attachment area, has essentially no curvature in the load-free state (DAU, col. 6, ln. 18-22).

Regarding claims 8-11 and 13: HASEGAWA, as discussed in the rejection above, discloses the armature having fixing holes.

HASEGAWA does not disclose the outer ends of the leaf springs being inserted into the fixing holes of the armature.

DAU teaches inserting the ends of the leaf spring into mounting holes (104a) (DAU, col. 6, ln. 7-12). DAU shows in Fig. 2 one embodiment of a mounting method of the leaf spring (16a), and in Fig. 6 shows the embodiment wherein the leaf spring is inserted into the hole (104a) of the plate (14a). It would be reasonable for one of ordinary skill in the art to substitute the mounting structure shown in Fig. 2 with the structure shown in Fig. 6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mounting of the leaf springs to the armature by having the springs inserted into the mounting holes in view of DAU to allow for a leaf spring with simple construction (no bends) to be used.

Allowable Subject Matter

3. Claims 6 and 12 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,154,669 - Discloses a clutch having leaf springs attached by connecting portions that are inclined.

US 6,702,082 - Teaches folding the ends of leaf springs in clutch devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEREK D. KNIGHT whose telephone number is (571)272-7951. The examiner can normally be reached on Mon - Thurs & every other Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. D. K./
Examiner, Art Unit 3681

/CHARLES A. MARMOR/
Supervisory Patent Examiner, Art
Unit 3681